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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

| EXAMINER | |
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| WANG, EUGENIA | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/529,289 | SUHARA ET AL. | |
| | Examiner | Art Unit | |
| | EUGENIA WANG | 1795 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *18 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3 and 5-24* is/are pending in the application.

4a) Of the above claim(s) *2, 6-15, 17, 19-21, 23, and 24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,16,18 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. In response to the amendments received February 18, 2008, February 29, 2008, and March 31, 2008:

a. Claims 23 and 24 have been added as per Applicant's request. Claims 1-3 and 5-24 are pending with claims 2, 6-15, 17, 19-21, 23, and 24 being withdrawn as being drawn to an unelected species.

b. The translation submitted on March 31, 2008 is acknowledged and perfects foreign priority to the September 26, 2002 date.

c. The previous rejection of record has been withdrawn in light of the newly submitted translation (i.e. the use of JP 2003-257416 (Moriuchi et al.)). However, a new rejection has been applied.

### *Continued Examination Under 37 CFR 1.114*

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 18, 2008 has been entered.

### *Election/Restrictions*

3. Newly submitted claims 23-24 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: A species

requirement was presented to the positive electrode material having the formula $Li_pCo_xM_yO_zF_z$, wherein M is a transition metal element other than Co or an alkaline earth metal and p, x, y, z, and a are all variables. In the response to the Election/Restriction (dated 11/28/2006), Applicant elected the generic $LiCoO_2$. However, newly presented claims 23 require either the presence of M and/or F, a species which was not elected.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 23-24 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Priority***

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-093417 (Gosho et al.) in view of US 6103213 (Nakamura et al.) and WO 99/49528 (Matsumoto et al.). **NOTE: US 6617073, the English equivalent to WO 99/49528 is being relied upon as a translation.

As to claims 1, 16, and 18, Gosho et al. teach the use of Li-Co based composite oxide materials used a positive plate (electrode) for use in a lithium ion secondary battery (abs) (as applied to claims 1, 16, and 18). The positive active material is taught in greater detail. $LiCoO_2$ is one specific permutation of the Li-Co based composite oxide (the species elected) (see Example, staring para 0049). The material used is a mixture of particles having two different sizes, the larger (first) particles having a particle size between 15-22 μm (thus the average particle size must be somewhere between 15-22 μm, wherein most of the range fits that of the claimed range of 7-20 μm) and the small (second) particles having a particle size between 1-6 μm (abs). Furthermore, a

ratio in which the two particle sizes are used is discussed: a ratio of 0.25 to 0.60:1 (small:large) (abs). The ratio range previously discussed fits that of the instant application, as can be easily compared by converting the ratios. The claimed range, if converted to be compared to first particles to second particles (large:small) is between 1:1.67 to 4 (via 1:0.60 to 0.25) and thus lies between the claimed range (1:0.5 to 9). Gosho et al.'s particles (both first and second) are substantially spherical shaped, as it is stated that the particles are spherical and measures the particle size of the sphere with a circular cross section (para 0011).

It is noted that Gosho et al.'s first particles have a size between 15-22 μm, and Gosho et al.'s second particles having a particle size between 1-6 μm (abs). Therefore the range taught by Gosho et al. encompasses most of range claimed by the instant application. Again, at least a portion of the size distributions fit within the relationship of the required by the instant application. For example a second particle size of 3 μm fits the claimed size proportion with respect to a first particle with the size along the entire range of Gosho et al. (15-22 μm).

It is also noted that althoughD50 (average particle sizes), D10, and D90 particle sizes are not specifically mentioned, one of ordinary skill in the art would expect that D10 and D90 with respect to D50 would lie in between 50% and 150% of D50. This expectation can be made due to the size constraints Gosho et al. places on its first (large) particles. The particle size ranges from 15-22 μm. No matter what the average size is in the taught range, any value of D10 and D90 cannot fall outside of that claimed range. The endpoints can be used to show how it is impossible for Gosho et al.'s

invention to have a D10 and D90 outside of the claimed range. For example, if D50 of Gosho et al. were 22 μm, then D10 could be no smaller than 11 μm and D90 could be no larger than 33 μm. However, the particles themselves are defined to be between 15-22 μm, therefore D10 and D90 of Gosho et al. must fall in the claimed range. Likewise, if, for example, D50 of Gosho et al. were 15 μm, D10 could be no smaller than 7.5 μm and D90 could be no larger than 22.5 μm. Again, since the particles themselves are defined to be between 15-22 μm, D10 and D90 of Gosho et al. must fall in the claimed range. This reasoning is applicable to all of the first particles in the range claimed by Gosho et al., wherein the D10 and D90 limits of the claimed invention are met for each point along the range taught by Gosho et al. Additionally, it is noted that in a particular example of Gosho et al., it is said that the first particle diameter has a size of 17 μm, and therefore it at the very least suggests that the first particles have a uniform size of 17 μm that thus applies to D50 and how D10 and D90 correspond to D50 (i.e. within the confines of D10 and D90 as claimed by the instant application) (para 0049). (*NOTE: For an alternate interpretation of the aspect ratio, see below for an obviousness statement.)

It is further noted that although an aspect ratio is not specifically mentioned in Gosho et al., one of ordinary skill in the art would expect that aspect ratio of the particles taught by Gosho et al. would 1/1 or at the very least close to 1/1 (as indicative of a spherical particle). This expectation can be made as Gosho et al. defines particles as spherical (para 0011). Additionally, Gosho et al.'s use of a spherical diameter obtained from the circular cross sectional projection at least suggests that the particles

are spherical (para 0011). At the very least, Gosho et al.'s particles would be close enough to spherical to be defined as such in the prior art itself. In that case, if Gosho et al.'s particles do fall outside of the 1/1 to 2/1 aspect ratio range, the difference would not have provided a patentably distinct product. It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Claims that differ from the prior art only by slightly different (non-overlapping) ranges are prima facie obvious without a showing that the claimed range achieves unexpected results relative to the prior art. (In re Woodruff, 16 USPQ2d 1935,1937 (Fed. Cir. 1990)) (**NOTE: For an alternate interpretation of the aspect ratio, see below for an obviousness statement.)

Gosho et al. can alternately be interpreted in such a manner that (a)* it does not teach that the D10 and D90 compared to D50 covers a range claimed by the instant application (where D10 is at least 50% of D5 and where D90 is no more than 150% of D50) and (b)** no aspect ratio is specifically defined.

*With respect to (a), it can alternately be interpreted that Gosho et al. does not specifically define D10 and D90 constraints with respect to D50. In this case,

Nakamura et al. teach lithium-cobalt oxide particles with a narrow particle size distribution (i.e. uniform) that is used as cathode substances for lithium ion batteries (abs). The motivation for having a uniform particle shape and particle size is for higher packing density, which helps obtain a higher battery capacity (col. 1, lines 63-67). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to try to make particles that are nearly uniform in size to produce a battery with a higher packing density, which results in higher battery capacity. (Note: Although a small distribution is not defined, it is clear that a more uniform particle size is desirable, thus obviating the range of D10 being at least 50% of D5 and D90 being no more than 150% of D50).

**With respect to (b), it can alternately be interpreted that Gosho et al. does not specifically define an aspect ratio. In this case Matsumoto et al. teaches a lithium cobalt oxide material as a positive electrode material for a secondary battery (abs). Matsumoto et al. goes on to teach that fine particles are joined to make spherical or elliptically spherical particles (spherical particles have an aspect ratio of 1/1, as their width and length would both be the diameter of the particle). The motivation for using spherical particles in a positive electrode is that it improves electric conductivity and packing properties, which leads to increased discharge capacity and improvement in maintaining a rate in discharge capacity (col. 4, lines 43-60). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to make the particles in Gosho et al. spherical (having an aspect ratio of 1/1), as

taught by Matsumoto et al. in order to improve electric conductivity, packing properties, discharge capacity, and rate in discharge capacity.

6. Claims 3, 5, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gosho et al., Nakamura et al., and Matsumoto et al. (as applied to claim 1) in further view of US 2001/0010807 (Matsubara).

As to claim 3, Gosho et al. teach of a first particle between the size of 15-22 μm (abs). Gosho et al. does not disclose (a) the fact that the average particle size of the first particles is from 7-15 μm or (b) the surface area and press density of the positive electrode active material.

With respect to (a), Gosho et al. does not specifically have an example that teaches of a 15 μm average diameter for the first particle. However, a portion of the claimed range is covered by Gosho et al. Furthermore, in a particular example, it is said that the first particle diameter has a size of 17 μm (thus teaching of a uniform size of 17 μm that applies to D50, D10, and D90) (para 0049). Although it is slightly larger than the claimed range, it has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160

USPQ 809 (CCPA 1969). Claims that differ from the prior art only by slightly different (non-overlapping) ranges are prima facie obvious without a showing that the claimed range achieves unexpected results relative to the prior art. (In re Woodruff, 16 USPQ2d 1935,1937 (Fed. Cir. 1990))

With respect to (b), Matsubara discloses a lithium nickel cobalt oxide as the active material of a positive electrode for a rechargeable battery. The electrode active material has a specific surface area of 0.1 to 2 $m^2/g$ (which overlaps the range that is claimed in the instant application) and an average particle size of 5 to 30 μm (para 0026). The particle sizes are such that 10% of the particle size distribution is 0.5D and 90% is 2D or lower (with D being the average particle size) (para 0017). The press density is between 1 to 4 $g/cm^3$ (which overlaps the range that is claimed in the instant application) (para 0056). It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Due the fact that similar materials having similar material characteristics are used by the Matsubara piece and the instant application (as well as the Gosho et al. piece),

the half value width of the diffraction peak on (110) plane at $2\theta=66.5\pm1°$ from 0.07 to 0.14° is inherent. Furthermore, Matsubara teaches that the press density of the active material is important in that it decreases the moving distance between the particles and accelerates the crystal growth of the material (para 0057). The motivation for having a high surface area is to maximize surface area of the active material, and the motivation for having a high press density is decrease the moving distance between the particles. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the lithium cobalt oxide material of Gosho et al. to include having a surface area ranging from 0.3 to 0.7 $m^2/g$ and a press density 3.1 to 3.4 $g/cm^3$ as claimed in the instant application and taught within the ranges of by Matsubara in order to increase the density of the material to achieve higher capacity battery with an high charge/discharge rate.

As to claim 5, Gosho et al. does not teach the press density of either the first or second particles.

However, Matsubara teaches a lithium/nickel/cobalt composite oxide for a cathode active material (title). The press density given for the product is between 1-4 $g/cm^3$ (which encompasses the ranges for both the first and second particles as claimed by the instant application 2.9-3.2 $g/cm^3$ and 2.7- 3.1 $g/cm^3$, respectively) (para 0056). It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Generally,

differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Furthermore, Matsubara teaches that the press density of the active material is important in that it decreases the moving distance between the particles and accelerates the crystal growth of the material (para 0057). The motivation for having a high press density is decrease the moving distance between the particles. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the lithium cobalt oxide material of Gosho et al. such that it has a press density within the range taught by Matsubara in order to increase the density of the material to achieve higher capacity battery with an high charge/discharge rate. (Note: This press density range taught by Matsubara would be obviated for both particles used by Gosho et al., because both materials are included within the positive active material and would thus be subjected to the same pressing, thus making it a necessity that their press densities are within a range close to one another.)

As to claim 22, Gosho et al. does not disclose the press density of the positive electrode active material.

Matsubara discloses a lithium nickel cobalt oxide as the active material of a positive electrode for a rechargeable battery. The electrode active material has a an average particle size of 5 to 30 μm (para 0026). The particle sizes are such that 10% of the particle size distribution is 0.5D and 90% is 2D or lower (with D being the average

particle size) (para 0017). The press density is between 1 to 4 g/cm$^3$ (which overlaps the range that is claimed in the instant application) (para 0056). It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Furthermore, Matsubara teaches that the press density of the active material is important in that it decreases the moving distance between the particles and accelerates the crystal growth of the material (para 0057). The motivation for having a high surface area is to maximize surface area of the active material, and the motivation for having a high press density is decrease the moving distance between the particles. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the lithium cobalt oxide material of Gosho et al. to include having a press density 3.1 to 3.40 g/cm$^3$ as claimed in the instant application and taught within the ranges of by Matsubara in order to increase the density of the material to achieve higher capacity battery with an high charge/discharge rate.

***Response to Arguments***

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

However, since Gosho et al. is very similar to the previously applied Moriuchi et al., Examiner would like to take the opportunity to address some of the pertinent arguments that apply to Gosho et al., as they had applied to Moriuchi et al.

Applicant argues that the aspect ratio is not suggested, as only a diameter is described.

Examiner respectfully disagrees. All particles have an aspect ratio, and it is disclosed by Gosho et al. that the projection of the cross-section of the particles is circular, wherein the particles are assumed to be sphere-like in shape (para 0011). Accordingly, the aspect ratio would be a ratio of the height (diameter length in a circle) and the width (diameter length in a circle). Additionally, Gosho et al. does say that the particle groups themselves are spherical, which does at least suggest this fact (para 0011). There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. Schering Corp. v. Geneva Pharm. Inc., 339 F.3d 1373, 1377, 67. Applicant has not provided proof as to how the interpretation of aspect ratio taken by the Examiner is not applicable or does not exist, and thus the rejection is maintained.

Applicant argues that the diameters of the particles of the present invention does not always mean that the aspect ratio of the particles of the present invention is equivalent to the aspect ratio of the particles of the prior art.

Examiner respectfully disagrees. Applicant has not provided any proof as to how the diameters of the particles do not provide the aspect ratio of the claimed invention. Additionally, in the office action, Examiner clearly sets for a reason for expectation, which is reiterated herein for clarity's sake. "This expectation can be made as Gosho et al. defines particles as spherical (para 0011). Additionally, Gosho et al.'s use of a spherical diameter obtained from the circular cross sectional projection at least suggests that the particles are spherical (para 0011)."

Applicant argues that the test of diameter measuring is measured by laser beam scattering and does not show the proportion of the major axis to the minor axis (as is measured by the instant application).

Examiner respectfully disagrees. The laser beam scattering does provide a 2-D cross-sectional and therefore defines a major and minor axis. The major and minor axes would be the height and the width. In a circular cross section the major and minor axes would have the same length and would accordantly yield an aspect ratio of 1/1. Additionally, Gosho et al. in paragraph 0011 does talk about spherical particles spherical equivalent diameters. Examiner is unsure how this does not define the 3-D shape of the particle as spherical.

Applicant argues that the "spherical equivalent diameter" of is not really spherical but is only assumed to be spherical.

Examiner respectfully disagrees. Para 0011 of Gosho et al. talks about the spherical equivalent diameter and the fact that the projection of the laser is made from a sphere. Since Gosho et al. itself is saying that the particles have an approximately spherical shape, Examiner is unsure how the particles would not be spherical or at the very least how a spherical shape is not suggested by Gosho et al. Because Applicant provides no proof as to the fact that Gosho et al.'s particles are not spherical, the rejection is maintained.

** It is noted that all of the arguments above are drawn as to how the primary reference (previously Moriuchi et al., now Gosho et al.) does not teach spherical particles and does teach the aspect ratio. The rejections above have been maintained for the reasons above. However, Examiner would like to point out that an alternate obviousness rejection was applied as well, using Matsumoto et al. Since Applicant has not addressed the obviousness rejection, Examiner maintains the rejection as being proper.

Applicant argues that the combination of Gosho et al., Nakamura et al., and Matsubara et al. does not disclose or suggest the present invention wherein a lithium-cobalt composite oxide (first particles) have a predetermined particle size distribution and a lithium-cobalt composite oxide (second particles) filling the space amount the lithium-cobalt composite oxide (first particles) are mixed in a predetermined mixing ratio to form a mixture.

Examiner respectfully disagrees. Within the abstract of Gosho et al., two different particles are claimed, wherein at least a portion of the size range of both fits

that of the instant application. Furthermore, the mass ratio mixture of the two is claimed in the abstract (1.67 to 4, as the calculation in the rejection for claim 1 shows), which overlaps with the claimed range of 1/2 to 1/9 (0.5 to 9, comparing with the teaching of Gosho et al.). Since both types of particles with the same sizes that are claimed in the same mass ratio claimed are used together, Examiner is unsure how the mixture does not read on that of the claimed invention and maintains the rejection.

Applicant argues that Gosho et al., Nakamura et al, and Matsubara et al. fail to disclose nor suggest the technical concept of realizing a compacted dense structure and a large volume capacity density and press density by using the positive electrode active material having such constitution.

Examiner respectfully disagrees. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the concept of realizing a compacted dense structure and a large volume capacity density and press density by using the positive electrode active material having such constitution) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, although this concept is taught by Applicant, such a concept does not affect the scope of the claim. Applicant has not shown how the claimed invention is different than that of the combination of Gosho et al., Nakamura et al., Matsubara et al., and Matsumoto et al.

Applicant argues that the combination of the various limitations of claim 1 provides a superior positive active material that is impossible to obtain by combining Gosho et al., Nakamura et al., and Matsubara et al.

Examiner respectfully disagrees. Applicant has not provided proof as to why the combined teaching of Gosho et al., Nakamura et al., Matsubara et al., and now Matsumoto et al. would not reasonably exhibit the same characteristics as the claimed invention. The comparisons shown in table 1 are taken from Applicant's own disclosure and fail to compare Applicant's disclosure to the combined teaching of Gosho et al., Nakamura et al., Matsubara et al., and now Matsumoto et al.

Applicant argues that examiner uses impermissible hindsight to show all of the limitations (especially with respect to claims 3 and 22 with regards to (a) the compact dense structure, (b) large volume capacity density, and (c) press density).

Examiner respectfully disagrees. With respect to (a) and (b), Examiner would like to note that the compact dense structure and volume capacity is not claimed. Features upon which applicant relies (i.e., the concept of realizing a compacted dense structure and a large volume capacity density and press density by using the positive electrode active material having such constitution) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). With respect to (c) In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense

necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, there is a clear reason to combined Gosho et al. with Matsubara et al. based on the teaching of Matsubara et al. The motivation, as set forth, is that the claimed press density be to decrease the moving distance between particles to achieve higher capacity. Applicant has not provided any proof as to why this would not be obvious to one of ordinary skill in the art, and thus the rejection is maintained.

Applicant argues that the primary reference (previously Moriuchi et al., now Gosho et al.) does not disclose the press density, surface area, and half width of diffraction peak.

Examiner would like to note that Matsubara et al. is being relied upon to teach these limitations.

Applicant argues that it is not inherent for Matsubara et al.'s material to have the same half value diffraction peak as claimed, just because the materials used are similar.

Examiner respectfully disagrees. Because of the similarity of the materials, the characteristics would expected to be inherent. Thus Examiner has set for the reason for expected inherency. Applicant provides no proof to the contrary. Without proof, Examiner maintains the rejection.

Applicant argues that there is no motivation of impart the properties of Matsubara et al. (especially with respect to surface area and press density) with that of Gosho et al.

Examiner respectfully disagrees. The motivation is clearly set forth within the rejection and is reiterated herein for clarity's sake: "The motivation for having a high surface area is to maximize surface area of the active material, and the motivation for having a high press density is decrease the moving distance between the particles. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the lithium cobalt oxide material of Gosho et al. to include having a press density 3.1 to 3.40 $g/cm^3$ as claimed in the instant application and taught within the ranges of by Matsubara in order to increase the density of the material to achieve higher capacity battery with an high charge/discharge rate." Examiner is uncertain how the statement fails to provide motivation, and thus maintains the rejection.

Although Applicant makes arguments as to why the prior art or record does not teach the claimed items in claims 23 and 24, Examiner would like to note that such arguments are not pertinent, as those claims have been withdrawn as being drawn to a non-elected species.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/E. W./
Examiner, Art Unit 1795

/Gregg Cantelmo/
for E. Wang, Examiner of Art Unit 1795